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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JEROEN ARNOLDUS LEONARDUS RAAYMAKERS

Appeal 2009-003872
Application 10/509,453
Technology Center 2600

Decided: October 5, 2009

Before ROBERT E. NAPPI, MARC S. HOFF, and KARL D. EASTHOM, *Administrative Patent Judges*.

EASTHOM, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1-6, 8-12, 14-16, 18, and 19 (Br. 5).[1] We have jurisdiction under 35 U.S.C. § 6(b).

We affirm-in-part.

Appellant invented a tilt control device. A multi-dimensional actuator emanating an optical recording/reproducing beam corrects for a tilted or curved optical disc recording surface. "[F]ocus control voltages Uf1 and Uf2" (Spec. 5:22) respectively applied to "split focus coils C1 and C2" (*id.*:6) (Fig. 2) control the focus and tilt of the actuator 11; thereby tilting the beam and/or moving the actuator in a longitudinal z direction toward the recording surface for focusing. (Spec. 1:1-20; Spec. 4:30 to 5:23; Abstract).[2]

Exemplary claim 1 follows:

1. A tilt control device for controlling a radial tilt of a recording surface of an optical disc with respect to an optical recording/reproducing beam, said tilt control device comprising:

control means for generating two focus controlling outputs; and

actuating means for receiving said two focus controlling outputs for controlling a focusing state and the radial tilt of the optical recording/reproducing beam utilizing said received two focus controlling outputs, wherein said control means determines a radial tilt value based on a

[1] Appellant's Brief ("Br.") and the Examiner's Answer ("Ans.") are referenced here.

[2] This description of Appellant's disclosed invention constitutes factual findings.

differentiation of focus control values obtained at different radii of said optical disk.

The Examiner relies on the following prior art references:

Kusano	US 5,206,848	Apr. 27, 1993
Motosyuku	US 5,602,566	Feb. 11, 1997
Hajjar	US 5,627,808	May 6, 1997
Nagasato	US 6,181,670 B1	Jan. 30, 2001
Morimoto	US 6,266,301 B1	Jul. 24, 2001
Park	US 6,714,496 B2	Mar. 30, 2004 (filed Oct. 1, 2001)

The Examiner rejected, as obvious under 35 U.S.C. § 103(a):

Claims 1, 4, 6, 8-10, 12 and 14 based on Park, Kusano, and Hajjar;

Claim 3 based on Park, Kusano, Hajjar, and Morimoto;

Claims 2, 11, and 15 based on Park, Kusano, Hajjar, and Nagasato; and

Claims 5 and 16 based on Park, Kusano, Hajjar, and Motosyuku.

ISSUES

Claims 1, 4, 6, 8-10, 12 and 14

Appellant's arguments (App. Br. 13-17) focus on the limitations recited in claim 1 and assert a failure of Park to teach focus control. Accordingly, these claims will be treated as standing or falling with claim 1. *In re Nielson*, 816 F.2d 1567, 1572 (Fed. Cir. 1987); 37 C.F.R. § 41.37(c)(1)(vii). Therefore, the first issue before us is:

Did Appellant demonstrate that the Examiner erred in finding that Park and Kusano collectively teach "two focus controlling outputs for controlling a focusing state and the radial tilt of the optical recording/reproducing beam utilizing said received two focus controlling outputs," as set forth in claim 1?

Claims 2, 11, and 15

Appellant's arguments (App. Br. 17-19) assert a failure of Nagasato to teach split coils. Appellant does not specify any particular claim in this group. Accordingly, these claims will be treated as standing or falling with claim 11. *In re Nielson*, 816 F.2d at 1572; 37 C.F.R. § 41.37(c)(1)(vii). Therefore, the second issue before us is: Did Appellant demonstrate that the Examiner erred in finding that the Nagasato teaches a "split [focus] coil arrangement" as set forth in claim 11?

Claims 5 and 16

Appellant's arguments (App. Br. 19-20) assert a failure of Motosyuku to teach calculating "a mean disc tilt value" as set forth in claims 5 and 16. Therefore, the final before us is: Did Appellant demonstrate that the Examiner erred in finding that the Motosyuku teaches "a mean disc tilt value" as set forth in claims 5 and 16?

PRINCIPLES OF LAW

"[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability." *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). "'On appeal to the Board, an applicant can overcome a rejection by showing insufficient evidence of *prima facie* obviousness . . . .'" *In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) (citation omitted).

Under § 103,

> "there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness" . . . . [H]owever, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.

KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 418 (2007) (quoting *Kahn*, 441 F.3d at 988).

FINDINGS OF FACT (FF)

1. Park teaches a tilt calibrating system which adjusts for the tilt of a bent disc 1a or 1b (Figs. 6A-B). If the disc is "bent upwards" (col. 9, l. 51) a regulation plate 80 (and bent disc 1a thereon) "descends in the 'D' direction" (col. 9, l. 56) (Fig. 6A) due to rotation of a tilt motor 40 (and a spiral slant cam 60) responding to a drive signal MD. On the other hand, if the disc is "bent downwards" (col. 9, l. 67), the plate 80 (and bent disc 1b thereon) "descends in the 'U' direction" (col. 10, l. 5) (Fig. 6B). (Col. 9, l. 50 to col. 10, l. 14).

2. The drive signal MD ultimately depends upon first and second focus error output times FET1 and FET2 (*see* Park, col. 5, l. 7 to col. 6, l. 31). These focus error output times are initially calculated based on reference values for a normal disc and ascending and descending movement of the optical pick up unit 20 irradiating optical beams onto the disc (Park, col. 7, ll. 3-40).

3. Park states:

> The tilt phenomenon causes an optical axis of the optical pickup unit to be slant with respect to the disc recording surface, and

> *aberration* to occur in a *focusing* beam, with a result that a frequency characteristic of light, in particular, a phase characteristic in this case is degenerated. Accordingly, a reproduction performance is remarkably lowered. Also, in particular, information is not reproduced from a disc of which the crooked state of the disc recording surface is severe.

(col. 1, ll. 41-49; emphasis added).

4. To overcome this focusing aberration due to such bent discs (*see* col. 2, ll. 9-35), Park's "regulation plate 80 ascends and descends according to rotation of the spiral slant cam 60, to thereby rotate the turntable" (col. 4, ll. 37-39), based in part on focus error signals FET1 and FET2 (col. 3, ll. 12-26). Figs. 6A and 6B depict tilting of a disc occurring in conjunction with the perpendicular axis at the disc center rotating through tlt1 and tlt2 angles, to thereby adjust the disc (1a or 1b) surface to be perpendicular to the optically axial direction of beams irradiating from pickup unit 20 (based on z axis (ascend/descend) movement of plate 80 due to the cam 60) (col. 9, ll. 35-65, *see also* Fig. 5).

5. Motosyuku discloses calculating a difference between a beginning and ending tilt value angle for a hand-held information processor to facilitate scrolling of its display unit (col. 7, ll. 32-49; Abstract).

ANALYSIS

Claims 1, 4, 6, 8-10, 12 and 14

Appellant argues (App. Br. 14) that Park's signals FET1 and FET2 do not constitute "focus controlling outputs" but are "merely calibration measurements of an ascending and descending focus error output time." Appellant reasons (Br. 15) that "[w]hile Park et al. may call FET1 and FET2 first and second focus error output times, these signals are in no way used to control focus, their only purpose being to control the tilt motor."

Appellant's argument is not persuasive. As Appellant notes (*id.*), these "*focus* error output" signals (FF 2) (emphasis added) control the tilt movement (FF 1-4). As the Examiner found (Ans. 9), "[w]hen the tilt of the disc is changed, the focal point is also changed. Thus, by indirectly controlling focus, FET1 and FET2 are focus controlling outputs." Appellant does not refute the Examiner's finding with necessary argument or evidence.

In other words, Park's system controls tilt with this tilt movement resulting in z axis movement (i.e., ascending and descending movement) of the optical disc 1a or 1b relative to the optical pick-up 20, thereby adjusting the focus to render the optical beam perpendicular to a bent disc surface (FF 1-4). (Tilting the disc center axis through angles tlt1 and tlt2 further evidences control of the focus via implicit z axis movement of the disc (the disc pivots about an axis through its center on an arc) (*see* FF 4)). This tilt movement occurs in response to *focus* error output signals, FET1 and FET2 (FF 2) (emphasis added), as Appellant acknowledges (Br. 15). During the tilt movement, a spiral slant cam causes one edge of the disc regulation plate 80 to "descend[] in the 'D' direction" or "descend[] in the 'U' direction" (FF 1).[3] Correcting for the tilt in this manner corrects an "aberration" in the "*focusing* beam" caused by a "degenerated" "phase characteristic" (FF 3) (emphasis added).

Appellant's disclosed focus voltages similarly also adjust for tilt and relative z direction movement in terms of focusing (*supra* note 2). While Appellant's system may adjust these two beam movements independently

[3] In addition, prior to the tilt control, the pick up unit ascends and descends relative to the disc surface to control focus of the beam (*see* FF 2).

(*see id.*), claim 1 does not require independent control (nor does it specifically recite z axis movement). Park's system, employing a cam and rotating the disc through tilt angles, controls tilt and a focusing state (z-axis movement) for a (bent or other) disc relative to the pick-up, as the Examiner generally reasoned (Ans. 9-10, FF 1-4). Such control satisfies the limitation in claim 1 of an "actuating means for receiving said two focus controlling outputs for controlling a focusing state and the radial tilt."

Appellant argues (Br. 16-17) that "Hajjar et al. does not teach correcting the tilt of the optical beam with respect to the optical disc," but "[r]ather, Hajjar et al. teaches compensating for any tilt." The Examiner (Ans. 4) applied Hajjar to teach a "control means or processor [that] determines a radial tilt value based on a differentiation of focus control values obtained at different radii of said optical disc . . . ." The Examiner relied upon Kusano "to include the concept of tilting the beam instead of the disc" (Ans. 4). Appellant does not challenge the Examiner's application of Kusano's teachings to Park's system as modified by Hajjar. As such, Appellant's argument does not demonstrate error in the Examiner's findings with respect to Park, Kusano, or Hajjar.

For the reasons described above, Park teaches the disputed limitations of claim 1.

Accordingly, we will sustain the rejection of claim 1, and claims 4, 6, 8-10, 12, and 14 which were not argued separately and therefore fall with claim 1. *Nielson*, 816 F.2d at 1572 (Fed. Cir. 1987); 37 C.F.R. § 41.37(c)(1)(vii).

Claims 2, 11, and 15

Appellant argues that Nagasato's driving coil assemblies 112 and 114, each including a "'focusing coil'," "'tracking coil'," "'radial tilt coil'," and a "'tangential tilt coil'" (App. Br. 18) (quoting Nagasato, col. 8, l. 59 to col. 9, l. 3), are not split coils because "it appears that each of the coil assemblies 112 and 114 have a plurality of independent coils, each receiving its own driving current" (*id*).

Appellant's factual assertions, accepted as accurate, fail to demonstrate error in light of the argument presented. That is, Appellant's claim 11 recites "a split coil arrangement . . . [with] focus and tilt controlling outputs being supplied to *respective* coils of said split coil arrangement" (emphasis added). In other words, each coil receives its own respective current. This interpretation is consistent with Appellant's disclosed invention (Fig. 2; *supra* note 2). As such, Appellant has not demonstrated any patentable distinction between Nagasato's split coils and the coils recited in claim 11. Claims 2, 11, and 15, argued together as a group, are of similar scope in terms of the arguments presented.

Accordingly, we will sustain the rejection of claims 2, 11, and 15. *Nielson*, 816 F.2d at 1572 ; 37 C.F.R. § 41.37(c)(1)(vii).

Claims 5 and 16

The Examiner (Ans. 9) (citing Motosyuku col. 7, ll. 32-50), found that Motosyuku teaches a mean disc tilt value. Appellant (Br. 20) responds as follows: "[M]erely reading this section of Motosyuku et al., it should be apparent that there is no mean tilt value determined or stored in Motosyuku et al. Rather, an actual tilt value is stored in a register." The Examiner (*see* Ans. 10) fails to address this argument.

As Appellant argues (Br. 20), Motosyuku does not appear to teach "a mean disc tilt value" at the column relied upon by the Examiner (*see* FF 5) and as set forth in claims 5 and 16. As such, Appellant has "overcome [the] rejection by showing insufficient evidence of *prima facie* obviousness . . . ." *Kahn*, 441 F.3d at 985-86. Accordingly, we will not sustain the Examiner's rejection of claims 5 and 16.

Claim 3

Appellant relies upon arguments for claim 1 (Br. 17) to show error in the rejection of claim 3 based on the added reference to Morimoto. Therefore, as Appellant has not demonstrated Examiner error in the rejection of claim 1, the Examiner's rejection of claim 3 is also sustained. *Nielson*, 816 F.2d at 1572; 37 C.F.R. § 41.37(c)(1)(vii).

CONCLUSION

Appellant did not demonstrate that the Examiner erred in finding that Park and Kusano collectively teach "two focus controlling outputs for controlling a focusing state and the radial tilt of the optical recording/reproducing beam utilizing said received two focus controlling outputs," as set forth in claim 1. Appellant did not demonstrate that the Examiner erred in finding that the Motosyuku teaches a "split [focus] coil arrangement" as set forth in claim 11. Appellant did demonstrate that the Examiner erred in finding that the Motosyuku teaches "a mean disc tilt value" as set forth in claims 5 and 16.

DECISION

We affirm the Examiner's decision rejecting claims 1-4, 6, 8-12, 14, 15, 18, and 19. We reverse the Examiner's decision rejecting claims 5 and 16.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED-IN-PART

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